

**Claims**

- 1) A halogen-free fire retardant coating composition comprising
  - i) film forming polymer
  - ii) inorganic fire retardant material
- 5 characterised in that the fire retardant material comprises a combination of fire retardant filler particles and a metal stannate and/or a metal hydroxy stannate wherein the overall PVC of the composition is from 75 to 97 %
- 2) A fire retardant coating composition according to Claim 1 characterised in that the fire retardant material comprises fire retardant filler particles
- 10 coated with the metal stannate and/or the metal hydroxy stannate.
- 3) A fire retardant coating composition according to Claim 1 or Claim 2 characterised in that the inorganic fire retardant material is able to give off water and/or carbon dioxide when in the form of a dried coating and exposed to the elevated temperatures found in or close to a flame in a fire.
- 15 4) A fire retardant coating composition according to any one of the preceding Claims characterised in that the fire retardant filler is selected from the group consisting of huntite, hydromagnesite, aluminium trihydroxide and magnesium hydroxide.
- 5) A fire retardant coating composition according to any one of the preceding
- 20 Claims characterised in that the metal hydroxy stannate is zinc hydroxy stannate.
- 6) A fire retardant coating composition according to any one of the preceding Claims characterised in that the fire retardant material comprises from 100 to 2000% by weight of the film forming polymer.
- 25 7) A fire retardant coating composition according to any one of the preceding Claims characterised in that the composition also contains at least one

component selected from the group consisting of pigments, rheological modifiers, flow aids, dispersants, extenders, anti-foams, crosslinking agents and biocides.

- 8) A fire retardant coating composition according to any one of the preceding  
5 Claims characterised in that the composition has a medium shear viscosity measured at 25°C of from 0.6 Pa.s to 6.0 Pa.s.
- 9) A fire retardant coating composition according to any one of the preceding  
Claims characterised in that the composition is waterborne.
- 10) A fire retardant coating composition according to any one of the preceding  
10 Claims characterised in that the composition contains substantially spherical particles up to 1000 microns in diameter.
- 11) A fire retardant coating system comprising a first dried layer of fire retardant coating composition according to any one of the preceding  
Claims and a second dried layer of coating composition characterised in  
15 that the second layer is of a different composition to the first.
- 12) A method of forming a coated substrate comprising
  - a) providing a substrate
  - b) applying onto at least a portion of the substrate at least one layer of a coating composition as defined in any one of Claims 1 to 11
  - 20 c) allowing the at least one layer to dry.
- 13) A coated substrate characterised in that said substrate is coated with a coating composition according to any one of the preceding claims.
- 14) A coating composition substantially as hereinbefore described by reference to Example 1 or Example 2.